(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 11 December 2003 (11.12.2003)

PCT

(10) International Publication Number WO 03/102487 A 1

(51) International Patent Classification7:

WO 03/102487 A1

- (21) International Application Number: PCT/SG03/00065
- (22) International Filing Date: 28 March 2003 (28.03.2003)
- (25) Filing Language:

English

F28G 1/12

(26) Publication Language:

English

(30) Priority Data:

200203246-4 30 May 2002 (200205422-9 9 September 2002 (

30 May 2002 (30.05.2002) SG 9 September 2002 (09.09.2002) SG

- (71) Applicant (for all designated States except US): HY-DROBALL TECHNICS PTE LTD [SG/SG]; Block 1 #02-500, Rochor Road, Rochor Centre, 180001 Singapore (SG).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): SOH, Beng Kiat, Peter [SG/SG]; Block 1, #02-500, Rochor Road, Rochor Centre, 180001 Singapore (SG).

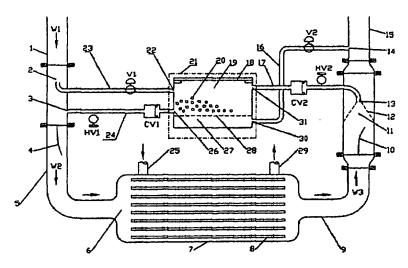
- (74) Agent: CHONG, Y.F.; PSA Bldg, P.O. Box 0399, 911144 Singapore (SG).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: AN IMPROVED CLEANING SYSTEM



(57) Abstract: A cleaning system for cleaning tubing using cleaning balls (20) circulated with the fluid through tubing (8). The system includes a separator (12) having a perforated funnel, which permits the fluid, but not the cleaning balls (20), to pass through. A housing (21) having an apertured partition (28) is used to divide the housing (21) into an first compartment (19) and a second compartment (27). An entrance (2) of a fluid supply pipe (23) and an exit (3) of a ball supply pipe (24) are formed for creating a difference in pressure to create a suction force to recirculate the cleaning balls (20) from the housing (21) via the ball supply pipe (24), back to the tubing (8) for cleaning the walls of the tubing (8). An entrance (13) of a ball return pipe (17) and an exit (14) of a fluid return pipe (16) are formed for creating a difference in pressure to create a suction force to recirculate the cleaning balls (20) from the separator (12) via the ball return pipe (17), into the housing (21).



O 03/102487 A